

Amendments to the Claims:

The listing of claims below will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) A catheter for providing an embolic material at a desired location in a vessel, comprising:

a flexible tubular member having a proximal end, ~~and a distal end,~~ and an outer surface, said tubular member including at least one ring of expansible material affixed to said its outer surface proximate less than 25 mm from said distal end, wherein said at least one ring has an expanded size which occludes the space between the outer surface and the vessel;

an injector configured to release embolic material proximate said distal end of said flexible tubular member and into the vessel; and

wherein the embolic material and the at least one ring occlude the vessel.

2. (Original) The catheter according to claim 1, wherein said ring comprises a material that expands in volume when in contact with a liquid.

3. (Original) The catheter according to claim 2, wherein said ring comprises a hydrogel.

4. (Original) The catheter according to claim 2, wherein said ring comprises a hydrogel foam.

5. (Currently amended) The catheter according to claim 2[[5]] wherein said ring is fully expanded after between 10 and 30 minutes of contact with a liquid.

6. (Original) The catheter according to claim 1 wherein said ring is affixed to said tubular member less than 10 mm from said distal end.

7. (Original) The catheter according to claim 1 wherein said ring is affixed to said tubular member less than 5 mm from said distal end.
8. (Original) The catheter according to claim 1 wherein said ring is affixed to said tubular member adjacent to said distal end.
9. (Original) The catheter according to claim 1 wherein said ring expands in response to an application of heat.
10. (Original) The catheter according to claim 1, further including multiple radioopaque markers spaced along the tubular member at predetermined intervals.
11. (Withdrawn) A method for treating a vascular malformation or tumor in a body, comprising:
 - a) providing a catheter, said catheter comprising a flexible tubular member having a proximal end and a distal end, the tubular member including at least one ring of expansible material affixed to its outer surface less than 25 mm from the distal end;
 - b) threading the catheter through a vessel until the distal end is positioned at a desired location in the body;
 - c) expanding the expansile ring such that the vessel is occluded at the location of the expansile ring; and
 - d) injecting an embolic material through the catheter and into the vascular malformation or tumor.
12. (Withdrawn) The catheter according to claim 11, wherein said ring comprises a material that expands in volume when in contact with a liquid.
13. (Withdrawn) The catheter according to claim 12, wherein said ring comprises a hydrogel.

14. (Withdrawn) The catheter according to claim 12, wherein said ring comprises a hydrogel foam.

15. (Withdrawn) The catheter according to claim 12 wherein said ring is fully expanded after between 10 and 30 minutes of contact with a liquid.

16. (Withdrawn) The catheter according to claim 12 wherein said ring expands in response to an application of heat.

17. (Withdrawn) The catheter according to claim 11 wherein said ring is affixed to said tubular member less than 10 mm from said distal end.

18. (Withdrawn) The catheter according to claim 11 wherein said ring is affixed to said tubular member less than 5 mm from said distal end.

19. (Withdrawn) The catheter according to claim 11 wherein said ring is affixed to said tubular member adjacent to said distal end.

20. (Withdrawn) The catheter according to claim 11 wherein the catheter includes a plurality of radioopaque markers spaced along the tubular member at predetermined intervals.

21. (Withdrawn) The method according to claim 20, further including the step of using the radioopaque markers for measurement purposes.

22. (New) The catheter according to claim 1, wherein the embolic material contacts the at least one expansible ring after the material is released into the vessel.

23. (New) The catheter according to claim 1, wherein the at least one ring is detachable from said tubular member while the tubular member is at the desired location within the vessel.

24. (New) The catheter according to claim 1, wherein the at least one ring is affixed to said tubular member no greater than 25 mm from said distal end.

25. (New) The catheter according to claim 1, wherein said at least one ring of expansible material reaches its expanded size in response to application of a controlled stimulus.

26. (New) The catheter according to claim 1, wherein said at least one ring of expansible material reaches its expanded size in response to an in vivo environment within the vessel.

27. (New) The catheter according to claim 1, wherein said at least one ring of expansible material reaches its expanded size in response to a combination of contact with an in vivo environment in the vessel and application of a controlled stimulus.

28. (New) The catheter according to claim 1, wherein the combination of said at least one ring of expansible material in its expanded size and said embolic material occludes the vessel.

29. (New) A catheter for providing an embolic material at a desired location in a vessel, comprising:

a flexible tubular member having a proximal end, a distal end, and an external surface, said flexible tubular member further having an expansible portion adjacent said distal end; and

wherein said expansible portion has a resting size and an expanded size, said resting size closely approximating said external surface of said flexible tubular member and said expanded size being sufficient to occlude the space between said flexible tubular member and the vessel; and

wherein said expansible portion is detachable from said flexible tubular member while said flexible tubular member is at the desired location in the vessel.

30. (New) The catheter according to claim 29, further including an injector configured to inject an embolic material from said distal end of said flexible tubular member into the vessel.

31. (New) The catheter according to claim 29, wherein said expansible portion expands from said resting size to said expanded size in response to application of a controlled stimulus.

32. (New) The catheter according to claim 29, wherein said expansible portion expands from said resting size to said expanded size in response to contact with an in vivo environment within the vessel.

33. (New) A catheter for providing an embolic material at a desired location in a vessel, comprising:

an elongated tubular member having a proximal end, a distal end, and a circumference, said elongated tubular member further having an expansible portion comprising an expandable material about said circumference and proximate said distal end; and

wherein said distal end is configured to permit embolic material to be placed in the vessel through said distal end;

wherein said expansible portion is configured to expand from a first position to a second position, said second position occluding the space between said circumference of said elongated tubular member and the vessel;

wherein said embolic material and said expansible portion in said second position occlude the vessel; and

wherein said expansible portion is detachable from said elongated tubular member while said elongated tubular member is at the desired location in the vessel.

34. (New) The apparatus of claim 33, where said expansible portion is detachable from said elongated tubular member while at the desired location in the vessel.

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Amendments to Drawings

Applicant amends Figure 4 by deleting reference to numeral 14. A substitute drawing page is attached.